



Spectral Gamma-Ray Borehole
Log Data Report

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Borehole

40-07-11

Log Event A

Borehole Information

Farm : <u>S</u>	Tank : <u>S-107</u>	Site Number : <u>299-W23-187</u>
N-Coord : <u>36,068</u>	W-Coord : <u>75,678</u>	TOC Elevation : <u>665.67</u>
Water Level, ft :	Date Drilled : <u>4/30/1974</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

This borehole was drilled during March and April 1974 and completed to a depth of 100 ft with 6-in.-diameter casing. The driller's log contains no mention of perforations or grout; therefore, it is assumed that the borehole was not perforated or grouted. The casing thickness is assumed to be 0.280 in., on the basis of published thickness for schedule-40, 6-in. casing.

The zero reference for the SGLS logs is the top of the casing.

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>05/1996</u>	Calibration Reference : <u>GJPO-HAN-5</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>06/06/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>24.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>06/07/1996</u>	Logging Engineer: <u>Alan Pearson</u>
Start Depth, ft.: <u>97.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>23.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Borehole

40-07-11

Log Event A

Analysis Information

Analyst : D.L. Parker

Data Processing Reference : P-GJPO-1787

Analysis Date : 03/10/1997

Analysis Notes :

This borehole was logged in one log run using a centralizer. The pre- and post-survey field verification spectra met the acceptance criteria established for peak shape and system efficiency. The energy and peak-shape calibration from pre-survey field verification spectra were used to establish the channel-to-energy parameters used in processing the spectra acquired during the log run.

Casing correction factors for a 0.280-in.-thick casing were applied during the analysis.

Cs-137 was the only man-made radionuclide encountered in this borehole. Cs-137 contamination was detected from the ground surface to about 42.5 ft, from 52 to 55 ft, and at 56.5 and 96.5 ft. The maximum Cs-137 concentration was 9.8 pCi/g at a depth of 9 ft.

The logs of the naturally occurring radionuclides show an increase in K-40 concentrations from 47.5 to 49.5 ft and an increase in U-238 concentrations from 50 to 52 ft. An increase in KUT concentrations was detected at a depth of about 65 ft.

Details concerning the interpretation of data for this borehole are presented in the Tank Summary Data Reports for tanks S-104 and S-107.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The naturally occurring radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma-rays used to calculate concentrations.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection limit (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes both the man-made and naturally occurring radionuclides, the total-count log plot, as well as the Tank Farm gross-gamma log. The Tank Farm gross-gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma log plot to coincide with the SGLS data.